

WHAT IS CLAIMED IS:

1. Process for determining the alcoholic strength of an alcoholic beverage or a water/alcohol solution in general, comprising the operations of:

- effecting the heating of a predetermined quantity of the said water/alcohol solution until it partly or completely evaporates,
- detecting the change in its temperature over time as the said quantity of solution is heated and evaporated, and
- determining the total energy necessary to cause partial or complete evaporation of the said quantity of solution, or the time required for partial or complete evaporation, or the integral of the said temperature over time during partial or complete evaporation; the magnitude of each of these parameters being indicative of the alcohol concentration by volume in the said water/alcohol solution.

2. Process according to claim 1, comprising the operations of:

- providing a capillary conduit having a predetermined diameter and containing a quantity of the water/alcohol solution under investigation,
- causing a quantity of the water/alcohol solution to emerge from one end of the capillary conduit, and then depositing that quantity on a heating device.

3. Process according to claim 1, in which the heating device comprises a heating resistor which is operatively provided with constant electrical power and in which the total energy necessary to cause complete or partial evaporation of the said quantity of the water/alcohol solution is evaluated by detecting the change in temperature over time of the said resistor during the period of time between the start of heating the said quantity of the drop of solution on the heater device and complete or partial evaporation of that quantity.

4. Process according to claim 3, in which a temperature sensor, such as a thermistor or a thermocouple, is associated with the said heating resistor.

5. Process according to claim 4, in which the heating resistor and the associated temperature sensor are constructed of polysilicon or metal or silicon implanted using integrated circuit technology in one silicon substrate.

6. Process according to claim 4, in which a heating resistor of a suitable shape to receive and contain the said quantity of water/alcohol solution under investigation is used.

7. Process according to claim 6, in which a recess intended to receive and contain the said quantity of solution is constructed in the heating resistor, the said temperature sensor being located in the bottom of the said recess.

8. Process according to claim 1, in which the weight of the quantity of water/alcohol solution is measured while it is heated and evaporated.

9. Equipment for determining the alcoholic strength of a water/alcohol solution comprising:

- a heating device capable of receiving a predetermined quantity of the said water/alcohol solution, and
- means for the supply of power, detection and control associated with the heating device and capable of activating the said heating device in a controlled way to cause heating of the said quantity of solution up to partial or complete evaporation, and to determine the total energy necessary during heating and evaporation of the said quantity to bring about partial or complete evaporation of the said quantity of solution, or the time required for partial or complete evaporation, or the integral of the said temperature over time or during partial or complete evaporation.

10. Equipment according to claim 9, comprising a capillary conduit having a predetermined diameter capable of permitting the deposition of a predetermined quantity of solution onto the heating device.

11. Equipment according to claim 9, in which the heating device comprises a heating resistor and the said means for the supply of power, detection and control are capable of providing power to the said resistor at a constant electrical power and of evaluating the total energy necessary to cause partial or complete evaporation of the said quantity of solution by detecting the change in the temperature of the said resistor over time during the period of time between starting to heat the said quantity of solution and partial or complete evaporation of the said quantity of solution.

12. Equipment according to claim 11, in which a temperature sensor such as a thermistor or a thermocouple is associated with the said heating resistor.

13. Equipment according to claim 12, in which the heating resistor and the associated temperature sensor are constructed for example of polysilicon, metal and the like using integrated circuit technology in the same silicon substrate.

14. Equipment according to claim 12, in which the heating resistor is of a shape adapted to receive and contain a quantity of the water/alcohol solution under investigation.

15. Equipment according to claim 14, in which a recess intended to receive and contain the said quantity of solution is constructed in the heating resistor, the aforesaid temperature sensor being located in the bottom of the said recess.

16. Equipment according to claim 9, comprising weighing means capable of detecting the weight of the quantity of water-alcohol solution under investigation while it is being heated and evaporated.